

REMARKS

Claims 1-4¹ are all the claims pending in the application. Claims 1-3 presently stand rejected. Claim 4 remains withdrawn from consideration as being drawn to a non-elected invention.

Applicant adds claim 5 to clarify the present invention as discussed in further detail below.

Claims 1-3 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Fujikura (JP 4-160028) in view of Le Sergent (5,194,714) and optionally in view of Yokota (4,846,867) and Fleming (4,872,895).

Analysis

The Examiner asserts that Fujikura discloses all the features of the claimed invention according to claim 1, except for the plasma torch.

Claim 1 is directed to a method of fabricating an optical fiber preform, including the step of outside deposition of silica in the vicinity of a heating area. The heating area is created by heating means during at least one pass of the heating means and an injector means associated with that heating means along a longitudinal axis of the preform. The relative positions of the injector means and the heating means are adjusted with respect to each other so that the silica is deposited in the heated area regardless of the position of the heating means. The heating means is a plasma torch.

¹ The Examiner omitted claim 4 from the pending claims in the application. Claim 4 has not been canceled from the application.

In the present invention, the heating means and the injecting means move *with respect to each other*. In other words, the *relative positions* of the heating means and the injecting means are adjusted since they move separately from one another.

This aspect of the invention is clearly described in claim 1, which states that the heating means and injecting means are “associated” with each other and that the silica is injected in the vicinity of the heating area created by the heating means. In other words, the silica is injected in the area of the heating area created by the heating means, which moves relative to the injecting means. This is distinguishable from the disclosure of Fujikura as follows.

Fujikura discloses a device for producing an optical fiber preform. In Fujikura, although a plurality of heating/injecting means are provided, each heating and injecting means is an integral unit so that their relative positions cannot be adjusted with respect to each other along a longitudinal axis of the preform. Thus, while the heating means of one member may be relatively moved with respect to the injecting means of *another* member, the heating means and injecting means that are *associated* with each other are not moved with respect to each other.

This association between the injecting means and heating means of the present invention is further shown by the recitation of claim 1 which states that the silica is injected in the vicinity of a heating area created by the heating means that is associated with the injector means. Thus, the present invention is directed to injecting silica to a heating area created by a heating means that is movable with respect to the injecting means injecting that silica.

At most, Fujikura discloses two guideplates 7a, 15a, each moveable with respect to the other so that their relative positions can be adjusted. However, each of these guideplates contains a heating means and its associated injections means; there is no provision for the

heating means of one of the guideplates to create a heating area so that silica injected from the other guideplate is injected to that heating area of the first guideplate. In other words, there is no teaching or suggestion that a heating means and injecting means that are associated with each other are separately moveable with respect to each other along a longitudinal axis of the preform.

This is an important feature of the present invention because the distance between the heating means and the injecting means allows for a more efficient method for fabricating an optical preform. As discussed throughout the instant application, since the heating means and injecting means are distanced from each other, a heating area created by the heating means can be more effectively utilized by the injecting means.

None of the other cited references makes up for this deficiency. Le Sergent fails to teach or suggest that the heating means and injecting means that are associated with each other are movable with respect to each other. Yokota fails to teach or suggest movable heating or injecting means. Still further, Fleming also fails to teach or suggest that the heating means and injecting means that are associated with each other are movable with respect to each other.

Thus, even if one were to combine the cited references, one would not have been motivated to provide heating means and injecting means that are adjusted with respect to each other along the longitudinal axis of the preform, so that the silica is deposited in the vicinity of the heating area created by that heating means.

In view of the foregoing, claim 1 is patentable.

The remaining rejections are directed to the dependent claims. These claims are patentable for at least the same reasons as claim 1 above, by virtue of their dependency therefrom.

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In addition, Applicants add claim 5 to further define the invention. In particular, claim 5 recites that the injecting means injects the silica, and that the silica is injected within the heating area created by the heating means. This claim is patentable for at least the same reasons as claim 1, by virtue of its dependency therefrom.

Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

Applicant hereby petitions for any extension of time which may be required to maintain the pendency of this case, and any required fee, except for the Issue Fee, for such extension is to be charged to Deposit Account No. 19-4880.

Respectfully submitted,



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APPENDIX

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

Claim 5 is added as new claims.